

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (previously presented): A computer system to virtually organize content of a plurality of disparate content repositories, content organizing structures of the plurality of disparate content repositories, work items of a plurality of disparate workflow systems, and work organizing structures of the plurality of disparate workflow systems, comprising:  
a processor; and  
a memory comprising:

an application program interface (API), executable by said processor, to interface with a software application; and

a virtual repository comprising a plurality of nodes, a first node of the plurality of nodes linking to a work item of a first workflow system of the plurality of workflow systems, a second node of the plurality of nodes linking to a work item of a second workflow system of the plurality of workflow systems, a third node of the plurality of nodes linking to a work organizing structure of the first workflow system, a fourth node of the plurality of nodes linking to a work organizing structure of the second workflow system, a fifth node of the plurality of nodes linking to a content of a first content repository of said plurality of disparate content repositories, a sixth node of the plurality of nodes linking to a content of a second content repository of said plurality of disparate content repositories, a seventh node of the plurality of nodes linking to a content organizing structure of the first content repository, and an eighth node of the plurality of nodes linking to a content organizing structure of the second content repository, wherein the API provides access to the virtual repository, wherein the work organizing structure of the first workflow system is one of: a queue and a task list, wherein the work organizing structure of the second workflow system is one of: another

queue and another task list, wherein the content organizing structure of the first content repository is a folder, wherein the content organizing structure of the second content repository is another folder.

Claim 2 (previously presented): The system of claim 1 wherein creation of the virtual repository does not replicate any of the content, content organizing structures, work items, and work organizing structures; and wherein the creation of the virtual repository does not impact any of the content, content organizing structures, work items, and work organizing structures.

Claim 3 (previously presented): The system of claim 1 wherein creation of the virtual repository does not impact any of an existing organization of any of the content, content organizing structures, work items, and work organizing structures,

wherein creation of the virtual repository does not impact any functions of any of the content, content organizing structures, work items, and work organizing structures,

wherein creation of the virtual repository does not impact any indexing of any of the content, content organizing structures, work items, and work organizing structures, and

wherein creation of the virtual repository does not impact any security of any of the content, content organizing structures, work items, and work organizing structures.

Claim 4 (original): The system of claim 1 wherein the API is in a format selected from the group consisting of Java, Component Object Model (COM), Simple Object Protocol (SOAP) Web Services, Representational State Transfer (REST) Web Services, and Web Development Components.

Claim 5 (previously presented): The system of claim 1 further comprising at least one of a graphical user interface and a web-based interface.

Claim 6 (original): The system of claim 1 wherein the nodes are arranged in a parent-child hierarchy.

Claim 7 (currently amended): The system of claim 1 wherein the fifth node is of a type of a link to a repository content, the sixth node is of the type of the link to the repository content, the seventh node is of the type of a link to a repository folder, the eighth node is of the type of the link to the repository folder, the first node is of the type of a link to a workflow system work item, the second node is of the type of the link to the workflow system work item, the third node is of the type of a link to a workflow system work queue, the fourth node is of the type of the link to the workflow system work queue,

wherein the virtual repository comprises:

    a ninth node being of the type of a virtual folder,

    a tenth node being of the type of a link to a folder populated by saved repository search,

    an eleventh node being of a type of a link to a folder populated by a workflow system search, and

    \_\_\_\_\_a twelfth node being of a type of a link to an external resource via a URL.

Claim 8 (previously presented): The system of claim 1 wherein the nodes contain meta-data properties in addition to the meta-data maintained in their respective underlying said content repositories and said workflow systems, wherein the meta-data properties of the nodes describe a use of the content, content organizing structures, work items and work organizing structures of the virtual repository.

Claim 9 (previously presented): The system of claim 1 wherein at least one content repository of the plurality of content repositories has access control rules to the content and the content organizing structures, wherein at least one workflow system of the plurality of workflow systems has access control rules to the work items and the work organizing structures, wherein the nodes of the virtual repository comprise supplemental access control rules of the

virtual repository, wherein the supplemental access control rules are applied to the nodes within the virtual repository, wherein the supplemental access control rules describe supplemental security constraints to the content and content organizing structures of the at least one content repository, wherein the supplemental access control rules describe security constraints to the work items and work organizing structures of the at least one workflow system.

Claim 10 (previously presented): The system of claim 1 wherein the virtual repository is exported to an XML representation and imported from the same XML representation.

Claim 11 (previously presented): The system of claim 1 further comprising a middleware platform to abstract a particular content repository of the plurality of content repositories of the virtual repository, and another middleware platform to abstract a particular workflow system of the plurality of workflow systems of the virtual repository.

Claim 12 (previously presented): The system of claim 1 further comprising adaptors to provide access to specific content repositories and workflow systems.

Claim 13 (previously presented): The system of claim 1 further comprising an adaptor toolkit to build interfaces to future developed content repositories and workflow systems.

Claim 14 (canceled)

Claim 15 (canceled)

Claim 16 (canceled)

Claim 17 (canceled)

Claim 18 (canceled)

Claim 19 (canceled)

Claim 20 (canceled)

Claim 21 (canceled)

Claim 22 (canceled)

Claim 23 (canceled).

Claim 24 (previously presented): A computer system to create rich relationships between content, content organizing structures, work items and work organizing structures that exist in a plurality of content repositories, a plurality of workflow systems and at least one other external information source, comprising:

a processor; and

a memory comprising:

an application program interface (API), executable by the processor, to interface with a software application;

a plurality of nodes, wherein the API provides an interface to the plurality of nodes, a first node of the plurality of nodes linking to a work item of a first workflow system of the plurality of workflow systems, a second node of the plurality of nodes linking to a work item of a second workflow system of the plurality of workflow systems, a third node of the plurality of nodes linking to a work organizing structure of the first workflow system, a fourth node of the plurality of nodes linking to a work organizing structure of the second workflow system, a fifth node of the plurality of nodes linking to a content of a first content repository of said plurality of disparate content repositories, a sixth node of the plurality of nodes linking to a content of a second content repository of said plurality of disparate content

repositories, a seventh node of the plurality of nodes linking to a content organizing structure of the first content repository, and an eighth node of the plurality of nodes linking to a content organizing structure of the second content repository;

a plurality of associations describing relationships between the nodes, each association of said plurality of associations having at least two nodes that are members of that association, said each association describing a relationship between the members of that association, said each association also being a node; and

locators to reference and de-reference entities external to the system, a first locator to a first external reference, the first locator leverages workflow integration middleware to reference said first work item of said first workflow system; a second locator to a second external reference, the second locator leverages workflow integration middleware to reference said second work item from said second workflow system; a third locator to a third external reference, the third locator leverages workflow integration middleware to reference said work organizing structure of said first workflow system, a fourth locator to a fourth external reference, the fourth locator to reference said work organizing structure of said second workflow system; a fifth locator to a fifth external reference, the fifth locator leverages content integration middleware to reference said content of said first content repository; a sixth locator to a sixth external reference, the sixth locator leverages content integration middleware to reference said content of said second content repository; a seventh locator to a seventh external reference, the seventh locator leverages content integration middleware to reference said content organizing structure of said first content repository; an eighth locator to an eighth external reference, the eighth locator to reference said content organizing structure of said second content repository; and an extensible locator interface to provide a locator to another external system.

Claim 25 (original): The system of claim 24 wherein the API is in a format selected from the group consisting of Java, Component Object Model (COM), Simple Object Protocol (SOAP) Web Services, Representational State Transfer (REST) Web Services, and Web Development Components.

Claim 26 (previously presented): The system of claim 24 further comprising at least one of a graphical user interface and a web-based interface.

Claim 27 (previously presented): The system of claim 24 wherein the plurality of nodes represent content, content organizing structures, work items and work organizing structures that will participate in relationships with information, said information for each node of the plurality of nodes comprising at least one of: meta-data describing said each node, at least one role played in at least one association with another node, or more scoped names, a unique identifier of the subject of said each node, a locator of the external subject of said each node, and 0 or more node types.

Claim 28 (canceled).

Claim 29 (previously presented): The system of claim 24 wherein the association has said at least two members that are nodes playing a specific named role in the association.

Claim 30 (previously presented): The system of claim 24 wherein a member represents a specific role a node plays in the association.

Claim 31 (previously presented): The system of claim 30 wherein the member has a player specifying the node playing the role in the association.

Claim 32 (previously presented): The system of claim 24 wherein the associations have 0 or more association types, wherein the association types have logical properties describing the type of the relationship, wherein any association types comprise at least one of: an allowed cardinality of the relationship, allowed members of the relationship, required members of the relationship, a transitivity of the relationship, a delete propagation across the relationship, and a save propagation across the relationship.

Claim 33 (canceled).

Claim 34 (canceled)

Claim 35 (canceled)

Claim 36 (canceled)

Claim 37 (canceled)

Claim 38 (canceled)

Claim 39 (currently amended): ~~The A computer system~~ to provide notification of at least one event handler, of claim 34 further comprising:

a processor; and

a memory comprising:

an application program interface (API), executable by the processor, to interface with a software application; and

a plurality of subscriptions to a plurality of subscribed-to-items, respectively, wherein the API interfaces the software application to the plurality of subscriptions; the subscribed-to-items comprising a first content of a first content repository, a first content organizing structure of the first content repository, a first work item of a first workflow system, a first work organizing structure of the first workflow system, a second content of a second content repository, a second content organizing structure of the second content repository, a second work item of a second workflow system, a second work organizing structure of the second workflow system;

wherein the subscriptions are requests to track when at least one of an addition, change and delete occurs to any of the subscribed-to-items, respectively; and



\_\_\_\_\_ an event path defined per a logical group comprising a timer, a subscription group processor that creates events based on the subscriptions in response to the timer, a content monitor that detects change based on the events, an event filter that filters uninteresting change and interesting change, and an event handler that receives the interesting change.

Claim 40 (previously presented): The system of claim 39 wherein the timer initiates periodic polling of the first and second content repositories and the first and second workflow systems to detect a change.

Claim 41 (previously presented): The system of claim 39 wherein the subscription group processor initiates events on subscriptions of a subscription group.

Claim 42 (previously presented): The system of claim 39 wherein the content monitor comprises a plug-in software module to detect change in the subscribed-to-items.

Claim 43 (previously presented): The system of claim 39 wherein the event filter comprises plug-in modules that filter interesting and uninteresting changes in the subscribed-to-items, wherein the changes are filtered based on a meta-data value of at least one of the subscribed-to-items.

Claim 44 (previously presented): The system of claim 39 wherein a subscription context is made available to event path plug-ins, content monitors, event filters, and event handlers with access selected from at least one of: access to a live content integration middleware session, access to a live workflow integration middleware session, access to a statistics reporting API, access to an error reporting API, access to a logging API, and access to the active subscription for the plug-in.

Claim 45 (previously presented): The system of claim 34 further comprising a statistics module to gather runtime statistics on events passing through each step of an event path and

displaying said statistics; wherein said event path comprises a timer, a group processor, a content monitor, an event filter and an event handler.

Claim 46 (canceled)

Claim 47 (canceled)

Claim 48 (original): A computer-implemented method of virtually organizing content of a plurality of disparate content repositories, content organizing structures of the plurality of disparate content repositories, work items of a plurality of disparate workflow systems, and work organizing structures of the plurality of disparate workflow systems, comprising:

- providing an application program interface (API) to a virtual repository; and
- accessing the virtual repository via the API, wherein the virtual repository comprises a plurality of nodes, a first node of the plurality of nodes linking to a work item of a first workflow system of the plurality of workflow systems, a second node of the plurality of nodes linking to a work item of a second workflow system of the plurality of workflow systems, a third node of the plurality of nodes linking to a work organizing structure of the first workflow system, a fourth node of the plurality of nodes linking to a work organizing structure of the second workflow system, a fifth node of the plurality of nodes linking to a content of a first content repository of said plurality of disparate content repositories, a sixth node of the plurality of nodes linking to a content of a second content repository of said plurality of disparate content repositories, a seventh node of the plurality of nodes linking to a content organizing structure of the first content repository, and an eighth node of the plurality of nodes linking to a content organizing structure of the second content repository, wherein the work organizing structure of the first workflow system is one of: a queue and a task list, wherein the work organizing structure of the second workflow system is one of: another queue and another task list, wherein the content organizing structure of the first content repository is a folder, wherein the content organizing structure of the second content repository is another folder.

Claim 49 (canceled)

Claim 50 (original): A computer-implemented method of creating rich relationships between content, content organizing structures, work items and work organizing structures that exist in a plurality of content repositories, a plurality of workflow systems and at least one external information source, comprising:

interfacing, via an application program interface (API), a software application;

creating, via the API, a plurality of nodes, wherein the API provides access to the plurality of nodes, a first node of the plurality of nodes linking to a work item of a first workflow system of the plurality of workflow systems, a second node of the plurality of nodes linking to a work item of a second workflow system of the plurality of workflow systems, a third node of the plurality of nodes linking to a work organizing structure of the first workflow system, a fourth node of the plurality of nodes linking to a work organizing structure of the second workflow system, a fifth node of the plurality of nodes linking to a content of a first content repository of said plurality of disparate content repositories, a sixth node of the plurality of nodes linking to a content of a second content repository of said plurality of disparate content repositories, a seventh node of the plurality of nodes linking to a content organizing structure of the first content repository, and an eighth node of the plurality of nodes linking to a content organizing structure of the second content repository;

creating a plurality of associations describing relationships between the nodes, each association of said plurality of associations having at least two nodes that are members of that association, said each association describing a relationship between the members of that association, said each association also being a node; and

providing locators to reference and de-reference entities external to the system, a first locator to a first external reference, the first locator leverages workflow integration middleware to reference said first work item of said first workflow system; a second locator to a second external reference, the second locator leverages workflow integration

middleware to reference said second work item from said second workflow system; a third locator to a third external reference, the third locator leverages workflow integration middleware to reference said work organizing structure of said first workflow system, a fourth locator to a fourth external reference, the fourth locator to reference said work organizing structure of said second workflow system; a fifth locator to a fifth external reference, the fifth locator leverages content integration middleware to reference said content of said first content repository; a sixth locator to a sixth external reference, the sixth locator leverages content integration middleware to reference said content of said second content repository; a seventh locator to a seventh external reference, the seventh locator leverages content integration middleware to reference said content organizing structure of said first content repository; an eighth locator to an eighth external reference, the eighth locator to reference said content organizing structure of said second content repository; and an extensible locator interface to provide a locator to another external system.

Claim 51 (canceled)